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THE ECHOCARDIOGRAPHIC DIAGNOSIS OF ASYMMETRIC SEPTAL HYPERTROPHY: CAN THE USE OF CONTRAST AGENTS CHANGE THE DIAGNOSIS?

ACC Moderated Poster Contributions
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Background: A diagnosis of hypertrophic cardiomyopathy (HCM) has serious implications for the patient and also triggers life-long screening programs for family members. The most common form of HCM is asymmetric septal hypertrophy (ASH) in which the abnormal ventricular muscle thickening is confined to the interventricular septum (IVS). Paraseptal structures such as the moderator band or aberrant papillary muscles may occasionally run closely parallel to the IVS and can be difficult to distinguish as being separate from the true IVS on a routine echocardiogram (echo). The aim of this study was to assess the effect of contrast opacification of the ventricular blood pools on both sides of the IVS in patients who appear to have ASH on a good quality non-contrast echo.

Methods: Thirty consecutive patients with apparent ASH on a routine, good quality, non-contrast echo were followed-up with a Sonovue contrast echo. IVS thickness was measured on both echoes which were also visually interpreted by 2 experienced observers independently as being either normal or diagnostic of ASH. In addition, all echoes were reviewed to document the presence of paraseptal structures.

Results: There was a significant reduction in the measured thickness of all segments of the IVS with contrast compared to non-contrast echo ($p<0.001$). ASH was diagnosed by both observers in 22 of the 30 non-contrast echoes compared to only 12 of the 30 contrast echoes. On contrast echo right paraseptal structures were seen in 28 of the 30 patients. In 16 of these 28 patients, on non-contrast echo, these right paraseptal structures were either not identified, or incompletely identified, as being separate from the IVS. On contrast echo, 9 of the 30 patients had a left paraseptal band running closely parallel to, but clearly separate from, the IVS. On the corresponding non-contrast echo the left paraseptal band was either not identified (and mistaken as the left endocardial border of the IVS), or was poorly defined and easily missed on the non-contrast study.

Conclusions: An experienced observer is much less likely to diagnose ASH on echo when contrast is used as it improves the identification of paraseptal structures which are not part of the hypertrophic process.